

REMARKS

As a preliminary matter, Applicant thanks the Examiner for the continued allowance of independent claim 12 of the present invention.

Claims 2, 10, and 15 again stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ranjan et al. (U.S. 5,840,394) in view of Chuang et al. (U.S. 6,139,981). With respect to claim 2 of the present invention, claim 2 has been cancelled without prejudice herein, rendering the rejection thereto now moot. With respect to claims 10 and 15, these two claims have been rewritten in independent form herein, and Applicant respectfully traverses the rejection for at least the reasons of record, and as follows.

With respect to claim 10 of the present invention, Applicant respectfully traverses the rejection because neither of the cited references, whether taken alone or in combination, alone or in combination, teaches or suggests an underlayer having the recited thickness range featured by the present invention. With respect to claim 15 of the present invention, however, Applicant notes that the Examiner does not even assert that either of the cited references teaches that Cr is present only at the crystal grain boundaries of the magnetic layer. Accordingly, all of the arguments put forth in Response F are incorporated by reference herein.

The Examiner's continued rejection of claim 10 of the present invention appears to be based upon a simple mathematical error. At the bottom of page two of the outstanding Office Action, for example, the Examiner asserts that the Chuang "reference

teaches that the conventionally used Cr underlayer thickness is about 5.5nm.” (Emphasis added). This statement is incorrect. Chuang actually teaches that its underlayer is “about 550 [Å]” (col. 2, lines 24-26), which is equal to 55nm, and not the 5.5nm as stated by the Examiner. This difference is significant, because 5.5nm would be within the range of recited thickness for the present underlayer, whereas 55nm is well outside the recited range. Applicant submits that this mathematical error also may have been grounds for the Examiner considering the present invention obvious over the combination of references. As now amended, claim 10 affirmatively recites that the thickness of the layer is approximately between 2nm and 14nm, which is well below the thickness range affirmatively taught by Chuang for its underlayer. Accordingly, for at least these reasons, the rejection of claim 10 based on a combination of Ranjan and Chuang is respectfully traversed.

With respect to claim 15, Applicant again points out that the rejection still does not indicate where either of the references, alone or in combination, teaches that Cr is present only at the crystal grain boundaries of the alloy magnetic layer. Neither reference affirmatively teaches these limitations of claim 15, and the Ranjan reference in particular teaches away from these features. As correctly recognized by the Examiner, Ranjan affirmatively teaches two magnetic layers, but the Examiner only asserts that Ranjan’s *second magnetic layer* reads upon the recited magnetic layer of the present invention.

Ranjan affirmatively requires the additional first magnetic layer, which necessarily includes Cr in concentrations of at least 7.5at%. (See col. 3, line 14). By

definition therefore, Ranjan must include Cr at locations away from the crystal grain boundaries of the second magnetic layer, and more particularly, where the second magnetic layer meets the underlayer. Ranjan thus teaches away from the present invention. Accordingly, for at least these reasons, the rejection of claim 15 is also traversed, and should be withdrawn.

Applicant further submits that both the mathematical errors demonstrated in the rejection of claim 10, and also the failure to indicate anywhere in either prior art reference that teaches or suggests the limitations of claim 15, render the outstanding Office Action deficient on its face with respect to the rejections of both of these claims. Accordingly, because the outstanding Office Action would have to be vacated to correct these errors, Applicant submits that any of the amendments made to independent claims 10 and 15 herein are appropriate for entry at this time. Any corrected Office Action would have to be mailed after the filing date of the Amendment, and this Amendment should therefore be entered as a matter of right at this time.

For all of the foregoing reasons, Applicant submits that this Application, including claims 10, 12, and 15, is in condition for allowance, which is respectfully requested. The Examiner is invited to contact the undersigned attorney if a further interview would help expedite prosecution.

Respectfully submitted,
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